



U.S. Department  
of Transportation  
**Research and  
Special Programs  
Administration**

400 Seventh St., S.W.  
Washington, D.C. 20590

DOT-E 7277  
(SIXTEENTH REVISION)

**AUG 29 2001**

EXPIRATION DATE: **May 31, 2003**

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: Structural Composites Industries  
Pomona, California
2. PURPOSE AND LIMITATIONS:
  - a. This exemption authorizes the manufacture, marking and sale of non-DOT specification cylinders to be used for the transportation in commerce of certain Division 2.1 and 2.2 gases. This exemption provides no relief from any regulation other than as specifically stated herein.
  - b. The safety analyses performed in development of this exemption only considered the hazards and risks associated with transportation in commerce. The safety analyses did not consider the hazards and risks associated with consumer use, use as a component of a transport vehicle or other device, or other uses not associated with transportation in commerce.
3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.
4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR §§ 173.302(a)(1), 173.304(a), (d) and § 175.3 in that non-DOT specification cylinders are not authorized, except as specified herein.
5. BASIS: This exemption is based on the application of Structural Composites Industries dated June 1, 1999, in accordance with § 107.121, and a letter dated June 11, 2001, submitted in accordance with § 107.109.
6. HAZARDOUS MATERIALS (49 CFR § 172.101):

Hazardous materials description -- proper shipping name	Hazard Class/ Division	Identi- fication Number	Packing Group
Air, compressed	2.2	UN1002	N/A

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Hazardous materials description -- proper shipping name	Hazard Class/ Division	Identi- fication Number	Packing Group
Argon, compressed	2.2	UN1006	N/A
Carbon dioxide	2.2	UN1013	N/A
Helium, compressed	2.2	UN1046	N/A
Nitrogen, compressed	2.2	UN1066	N/A
Nitrous oxide, compressed	2.2	UN1070	N/A
Oxygen, compressed	2.2	UN1072	N/A
Methane, compressed	2.1	UN1971	N/A
Hydrogen, compressed	2.1	UN1049	N/A

7. SAFETY CONTROL MEASURES: Packaging prescribed is a non-DOT specification fiber reinforced plastic (FRP) full composite (FC) cylinder in full compliance with SCI's specification SCI Special Report 7338 on file with the Office of Hazardous Materials Safety (OHMS), and with DOT FRP-1 Standard, Revision 1 dated March 15, 1982 (178.AA), contained in Appendix A of this exemption except as follows.

178.AA-4 Duties of Inspector.

\* \* \*

(b) Add an additional sentence which reads: In lieu of testing for filament material properties by the exemption holder, a certificate by the filament manufacturer is acceptable provided that the procurement document specifies strength and quality requirements and that the supplied material is certified to those requirements.

178.AA-5 Authorized Material and Identification of Material.

(a) Aluminum liner must be 6351 or 6061 alloy, T6 temper or 6010 alloy subjected to a solution heat treat and aging appropriate for the alloy as indicated in the application. Aluminum alloy 6351 is not authorized for new construction.

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178.AA-9 Thermal treatment.

(a) The aluminum liner must be solution heat treated and aged as follows after all forming operations and prior to pressurizing or overwrapping.

(1) 6351 and 6061 alloy liners must be solution heat treated and aged to the T6 temper.

(2) 6010 alloy liners must be solution heat treated and aged as appropriate for the alloy indicated in the application.

178.AA-12 Destructive tests.

\* \* \*

(b)(1) Applies except that the rate of cycling may not exceed 10 cycles per minute.

178.AA-18 Design qualification tests.

\* \* \*

(d) Applies except that the rate of cycling may not exceed 10 cycles per minute.

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8. SPECIAL PROVISIONS:

a. Cylinder service life must not exceed 15 years.

b. Use of these cylinders for underwater breathing is not authorized.

c. Cylinders used in oxygen service must be in compliance with §§ 173.302(a)(5)(i) through (a)(5)(iv).

d. Cylinder must be packaged in accordance with § 173.301(k).

e. Each cylinder must be reinspected and hydrostatically retested every three years in accordance with § 173.34(e) as prescribed for DOT 3HT cylinders, except that the rejection elastic expansion criteria does not apply, permanent volumetric expansion must not exceed 5 percent of total volumetric expansion at test pressure and retest dates must

be steel stamped on the outer exposed metallic surface of the cylinder neck, or marked on a label securely affixed to the cylinder and overcoated with epoxy. Reheat treatment or repair of rejected cylinders not authorized.

f. Transportation of flammable gases is not authorized aboard passenger-carrying aircraft or passenger vessels.

g. Transportation of oxygen is only authorized when in accordance with § 172.102(c)(2) Special Provision A52 and § 175.85(h) and (i).

h. In accordance with the provisions of Paragraph (b) of § 173.22a, persons may use the packaging authorized by this exemption for the transportation of the hazardous materials specified in paragraph 6, only in conformance with the terms of this exemption.

i. When transported by cargo vessel, flammable gases covered by this exemption must be packed within a closed freight container of steel construction.

j. A person who is not a holder of this exemption, but receives a package covered by this exemption, may reoffer it for transportation provided no modifications or changes are made to the package and it is offered for transportation in conformance with this exemption and the HMR.

k. A current copy of this exemption must be maintained at each facility where the package is offered or reoffered for transportation.

l. Each packaging manufactured under the authority of this exemption must be either (1) marked with the name of the manufacturer and location (city and state) of the facility at which it is manufactured or (2) marked with a registration symbol designated by the Office of Hazardous Materials Exemptions and Approvals for a specific manufacturing facility.

m. A current copy of this exemption must be maintained at each facility where the package is manufactured under this exemption. It must be made available to a DOT representative upon request.

9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle, rail freight, cargo vessel, passenger vessel, cargo aircraft only, and passenger-carrying aircraft, except as noted in 8.(f) and (i).
10. MODAL REQUIREMENTS: A current copy of this exemption must be carried aboard each cargo vessel or aircraft used to

transport packages covered by this exemption. The shipper shall furnish a copy of this exemption to the air carrier before or at the time the shipment is tendered.

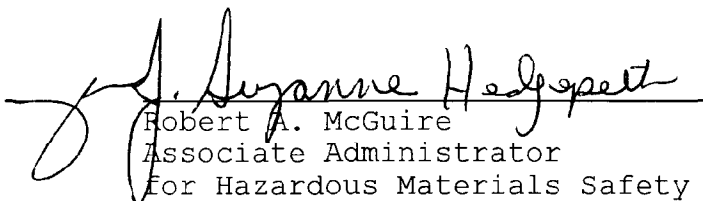
11. COMPLIANCE: Failure by a person to comply with any of the following may result in suspension or revocation of this exemption and penalties prescribed by the Federal hazardous materials transportation law, 49 U.S.C. 5101 et seq:
- o All terms and conditions prescribed in this exemption and the Hazardous Materials Regulations, Parts 171-180.
  - o Registration required by § 107.601 et seq., when applicable.

No person may use or apply this exemption, including display of its number, when the exemption has expired or is otherwise no longer in effect.

Each "Hazmat employee", as defined in § 171.8, who performs a function subject to this exemption must receive training on the requirements and conditions of this exemption in addition to the training required by §§ 172.700 through 172.704.

12. REPORTING REQUIREMENTS: The carrier is required to report any incident involving loss of packaging contents or packaging failure to the Associate Administrator for Hazardous Materials Safety (AAHMS) as soon as practicable. (Sections 171.15 and 171.16 apply to any activity undertaken under the authority of this exemption.) In addition, the holder(s) of this exemption must also inform the AAHMS, in writing, as soon as practicable of any incidents involving the package and shipments made under this exemption.

Issued in Washington, D.C.

  
Robert A. McGuire  
Associate Administrator  
for Hazardous Materials Safety

AUG 29 2001  
(DATE)

Address all inquiries to: Associate Administrator for Hazardous Materials Safety, Research and Special Programs Administration, Department of Transportation, Washington, D.C. 20590.  
Attention: DHM-31.

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The original of this exemption is on file at the above office.  
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permitted. Any alteration of this exemption is prohibited.

PO: AM